

## Claims

1. An end face sensor device characterized in that a receiving part for receiving information from a subject and outputting the information as another information is formed on an end face of a linear body.
2. An end face sensor device as claimed in claim 1 or 2, characterized in that the receiving part is a light sensor.
3. An end face sensor device as claimed in claim 2, characterized in that the light sensor is any of a photodiode, a phototransistor, a photo IC, a photo thyristor, a photoconductive element, a pyroelectric element, a color sensor, a solid-state image sensor, an element for position detection, and a solar battery.
4. An end face sensor device as claimed in claim 1, characterized in that the receiving part is a temperature sensor.
5. An end face sensor device as claimed in claim 1, characterized in that the receiving part is a humidity sensor.
6. An end face sensor device as claimed in claim 1, characterized in that the receiving part is an ultrasonic sensor.
7. An end face sensor device as claimed in claim 1, characterized in that the receiving part is a pressure sensor.
8. An end face sensor device as in any one of claims 1-7,

characterized in that a part or all of the receiving part is formed using a conductive polymer.

9. An end face sensor device as claimed in claim 8, characterized in that only one molecule of the conductive polymer is present between electrodes.

10. An end face sensor device as in any one of claims 1-9, characterized in that the linear body is a linear element in which a circuit element is formed continuously or intermittently in a longitudinal direction.

11. An end face sensor device as in any one of claims 1-9, characterized by being a linear element in which a cross section having plural regions for forming a circuit is formed continuously or intermittently in a longitudinal direction.

12. An end face sensor device characterized in that the end face sensor device is made of a linear body having at least two conductive regions in a cross section through an insulating region and a layer made of a conductive polymer is formed on an insulating layer region of an end face.

13. An end face sensor device as claimed in claim 12, characterized in that one of the conductive regions is formed in the center and the other conductive regions are formed in the outer circumference.

14. An end face sensor device as claimed in claim 13, characterized in that a longitudinal direction of a conductive polymer is arranged in a radial direction.

15. An end face sensor device as claimed in claim 13,

characterized in that a molecular length of a conductive polymer is shorter than or equal to a distance between electrodes.

16. An end face sensor device as claimed in claim 13, characterized in that a conductive polymer has a side chain used as a susceptor part with respect to a subject to be measured.

17. A method of producing an end face sensor device, characterized in that plural linear bodies are bundled to form a bundle and receiving parts are formed on end faces of said linear bodies every said bundle.

18. A method of producing a multi-functional end face sensor device, characterized in that plural bundles in which plural linear bodies are bundled are prepared and receiving parts with different functions every each of the bundles are formed on end faces of said linear bodies and then the linear bodies are taken out of each of the bundles and said linear bodies taken out are bundled.

19. A method of producing an end face sensor device, characterized in that at least one pair of electrodes are disposed in a linear body and a film is formed on an end face of the linear body while a bias voltage is applied between said electrodes.

20. A method of producing an end face sensor device as claimed in claim 17, characterized in that the one pair of electrodes are disposed in the center and the outer circumference of said linear body.

21. A method of producing an end face sensor device as in any one of claims 17-20, characterized in that the film is made of a conductive polymer.

22. A method of producing an end face sensor device as claimed in claim 21, characterized in that a length of one molecule of the conductive polymer is shorter than or equal to a distance between the electrodes.

23. An end face sensor device as in any one of claims 19-21, characterized in that the bias voltage is a DC voltage.

24. A method of producing an end face sensor device as in any one of claims 19-21, characterized in that the bias voltage is an AC voltage.

25. A method of producing an end face sensor device, characterized in that one pair of electrodes are disposed in a linear body and a film is formed on an end face of the linear body while a DC bias voltage and an AC bias voltage are superimposed and applied between said electrodes.

26. A method of producing an end face sensor device as in any one of claims 19-25, characterized in that a frequency of the AC bias voltage is changed with time.